Claims:

1. A process for the preparation of a vaccine against tuberculosis and other intracellular pathogens selected from the group consisting of *Mycobacterium leprae, leishmania, salmonella, trypanosoma, plasmodium, brucella, leisteria, HIV, streptococcas* and *cancer* wherein the said process comprising the steps of:

(i) culturing pathogens selected from the group comprising of *Mycobacterium tuberculosis, Mycobacterium leprae, leishmania, salmonella, trypanosoma, plasmodium, brucella, leisteria, HIV, streptococcas*;

(ii) culturing syngeneic (same strain), allogeneic (different strain) and xenogeneic (different species like sheep and goat) macrophages and macrophage cell lines selected from the group consisting of J774A, P388D1, RAW, BMC-2, THP-1, etc.;

(iii) infecting macrophages and cell lines with a pathogen;

(iv) treating the infected cells with known drugs followed by gamma irradiation to obtain the vaccine;

(v) immunizing disease resistant and susceptible strains of animals with the vaccine obtained above;

(vi) infecting the animals with live pathogen and monitoring their mortality and viable counts of infectious agent in lungs, spleen and liver; and

(vii) monitoring the vaccinated animals for proliferation and generation of $CD4^+$ Th1 and Th2 cells and $CD8^+$ cytotoxic T cells indicating the generation of cell mediated immunity.

2. A process for the preparation of a vaccine against tuberculosis, said process comprising the steps of:

(i) culturing *Mycobacterium tuberculosis* H37Rv;

(ii) culturing syngeneic and allogeneic macrophages and macrophage cell lines selected from the group consisting of J774A, P388D1, RAW, BMC-2, THP-1, etc.;

(iii) infecting macrophages and cell lines (J774, P388D1, RAW, BMC-2, THP-1) with *M. tuberculosis*;

(iv) treating the infected cells with isoniazid and gamma irradiation to obtain the vaccine;

(v) immunizing tuberculosis resistant and susceptible strains of mice with allogeneic macrophage tuberculosis vaccine (AMTV) and syngeneic macrophage tuberculosis vaccine (SMTV) obtained above;

(vi) infecting the mice with live *M. tuberculosis* and monitoring their mortality and viable counts of bacteria in lungs, spleen and liver;

(vii) monitoring the vaccinated animals for proliferation and generation of $CD4^+$ Th1 and Th2 cells and $CD8^+$ cytotoxic T cells indicating the generation of cell mediated immunity; and

(viii) inoculating the vaccine in the mouse footpad and examining the delayed type hypersensitivity reaction by measuring the swelling in the footpad for protective immunity.

3. A process for the preparation of a vaccine against salmonella, said process comprising the steps of:

(i) culturing *Salmonella typhimurium*;

(ii) culturing syngeneic and allogeneic macrophages and macrophage cell lines selected from the group consisting of J774A, P388D1, RAW, BMC-2, THP-1, etc.;

(iii) infecting macrophages and cell lines (J774, P388D1, RAW, BMC-2, THP-1) with *S. typhimurium*;

(iv) treating the infected cells with mitomycin C and gamma irradiation to obtain vaccine;

(v) immunizing tuberculosis resistant and susceptible strains of mice with vaccine obtained above;

(vi) infecting the mice with live *S. typhimurium* and monitoring their mortality and viable counts of bacteria in lungs, spleen and liver;

(vii) monitoring the vaccinated animals for proliferation and generation of $CD4^+$ Th1 and Th2 cells and $CD8^+$ cytotoxic T cells indicating the generation of cell mediated immunity; and

(viii) inoculating the vaccine in the mouse footpad and examining the delayed type hypersensitivity reaction by measuring the swelling in the footpad for protective immunity.

4. A process for the construction of a vaccine and for therapeutically manipulating immune system to induce T-helper and CTL response *in vivo* to a variety of antigens including tumor, and possibly to modulate favorable immune response substantially as herein described with reference to the examples.

5. A vaccine as prepared by the process of claim 1, wherein by entrapment of *M. tuberculosis, Salmonella* and other intracellular pathogens in the allogeneic and syngeneic macrophages, the preparations were treated by the available drugs against the pathogens and the vaccine is further gamma irradiated before using for the protection against the infectious diseases and cancer.